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How To Witness Test A Transformer—Part 1

Jun 1, 1999 12:00 PM, By Patrick K. Dooley, Virginia Transformer Corp.

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Before a manufacturer sends a transformer to your site, it conducts various tests. To ensure performance requirements, you may want to witness the testing and inspect the unit yourself.

Does a new transformer represent a major expenditure for your company? Not only does such an investment cost thousands of dollars, but it's also vital to the ongoing operation of your business. Reliability is obviously a top priority here. So, how do you ensure equipment integrity and performance? Witness testing is one way to make sure your new transformer meets industry standards and will provide quality performance after installation.

About 75% of the transformers purchased by utilities undergo witness testing, compared to about 10% of those built for industrial/commercial applications. Witness testing is also more common for larger, complicated designs. Often, as customers forge a strong working relationship with a manufacturer, they're less likely to witness test every transformer. What does witness testing require? Just a visit to the plant to examine the new transformer and watch it perform during various tests. The success of a witness test depends on proper preparation by the manufacturer and you, the purchaser. Here are some useful tips.

For the manufacturer:

- Notify inspector, who will witness the test two weeks in advance of test date to confirm schedule. Then, verify this information three working days before the test.
- Complete routine tests before the inspector arrives to prevent delays in witness testing. However, you, as the inspector, may wish to witness the routine tests.
- Confirm calibration of instruments as scheduled. Use standard data sheets to record test values.
- Provide test certification and data sheets as standard documentation. (See ANSI/IEEE C57.12.90-1993, *IEEE Standard Test Code for Liquid-Immersed Distribution, Power and Regulating Transformers* and *IEEE Guide for Short Circuit Testing of Distribution and Power Transformers*, and C57.12.91-1995, *IEEE Standard Test Code for Dry-Type Distribution and Power Transformers*, for minimum information on test requirements.)

For the customer:

- Completely understand the tests you'll witness.
- Designate you or someone else as the inspector when you place the order for the transformer. Notify the manufacturer so you or your representative receives all applicable documentation.
- Notify the manufacturer of any discrepancies in documentation.
- Accommodate the manufacturer's schedule to avoid possible cost overruns.
- Review all test documentation before arriving at the plant so you're familiar with the design parameters.

What to do at the site:

- Review the purpose of the tests and any associated procedures with the manufacturer's test engineer prior to commencing the tests.
- Discuss which tests are of particular importance so the manufacturer can give them extra attention.

What to look for during testing:

- Understand how to read results and how they impact performance.
- Listen to the transformer's sound level when the technician applies voltage, particularly if you've requested a sound test.

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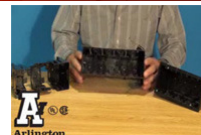
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